REMARKS

This is in response to the Office Action mailed January 28, 2003. Claims 28 and 32 have been amended. Claims 40-49 have been canceled without prejudice. New claims 50 and 51 have been added. Claims 28-39, 50, and 51 are currently pending and at issue.

No new matter has been added. Reconsideration of the present application is respectfully requested.

Restriction Requirement

The Examiner is thanked for permitting examination of both Groups I and II (i.e., claims 28-39) in the present application. Please cancel claims 40-49, without prejudice.

Priority Claim

The Examiner contends that the present application is not a continuation-in-part of U.S. Patent Application Serial No. 09/116,732 (now U.S. patent No. 6,017,504) because the present application was not co-pending when 09/116,732 was filed. Furthermore, the Examiner asserts that the present specification must contain a specific reference to the prior application when claiming the benefits of that prior application's filing date.

The specification has been amended to correct the priority claim to recite the following: "The present application is a national stage under 35 U.S.C. § 371 of PCT/CA99/00638, filed July 15, 1999, which is a continuation-in-part of U.S. Patent Application Serial No. 09/116,732, now issued U.S. Patent No. 6,017,504." Accordingly,

priority to PCT/CA99/00638 and U.S. Patent Application Serial No. 09/116,732 (now U.S. patent No. 6,017,504) has been properly claimed.

Objections to the Disclosure

The Examiner has objected to the disclosure as requiring correction of informalities on page 3, line 8; page 9, line 15; and page 13, line 12.

The specification has been amended at page 3, line 8 to replace "□" with a degree symbol (°). The specification has also been amended at page 9, line 15 and page 13, line 12 to replace "□" with a trademark symbol (™) in each instance. Therefore, the above informalities have been corrected and this objection should be withdrawn.

Rejections Under 35 U.S.C. §112, First Paragraph

Claims 28-39 have been rejected under 35 U.S.C. § 112, first paragraph, as non-enabling. The Examiner states that a person of ordinary skill in the art would not be able to make and/or use the invention based on the present disclosure because the instant claims do not provide a source of oxygen for forming the perovskite structures.

The rejection is respectfully traversed, and reconsideration is requested.

Claims 28 and 32 have been amended to specify that the starting powders are "in the form of oxides, hydroxides, carbonates, nitrates, oxalates, or chlorides." This amendment is supported by the specification at page 11, line 30 to page 12, line 2. Therefore, the source of oxygen in the claimed process has been specified. Accordingly, this rejection should be withdrawn.

Rejections Under 35 U.S.C. §112, Second Paragraph

Claims 28-39 have been rejected under 35 U.S.C. § 112, second paragraph, as indefinite with respect to the terms "predetermined" and "perovskite-like" in claims 28 and 32.

The rejection is respectfully traversed, and reconsideration is requested.

Regarding "predetermined," claims 28 and 32 have been amended to remove this term. The revised claims recite "a stoichiometric content of oxygen," which is a sufficiently definitive description of the final oxygen content. Therefore, this rejection should be withdrawn.

Regarding "perovskite-like," the Examiner is advised that the language of the claims limits the term "perovskite-like" to compounds having the general formula $[(ABO_3)_n + CyO_z]$. Further, at page 1, lines 14-23, the specification defines "perovskites" as a well-known type of mixed metal oxides having the general formula ABO_3 (p. 1, lines 14-18), and defines "perovskite-like" materials as comprising basic perovskite cells separated by intervening oxide layers and having the general formula $[(ABO_3)_n + CyO_z]$.

The Examiner is respectfully reminded that the definiteness requirements under 35 U.S.C. § 112, second paragraph, are met when particular definitions for claim terms are provided. *Sextant Avionique v. Analog Devices, Inc.*, 172 F.3d 817, 825 (Fed. Cir. 1999) (patentee "was free to act as its own lexicographer"). Here, the term "perovskite-like" is clearly defined by the specification.

Furthermore, claim language is considered definite if a person skilled in the art would comprehend the scope of the claim when read in view of the specification. *Union Pacific Resources Co. v. Chesapeake Energy Corp.*, 236 F.3d 684, 692 (Fed. Cir.

2001). Here, the claims and specification provide the general formula of $[(ABO_3)_n + CyO_z]$, which defines the scope of the term "perovskite-like."

Accordingly, "perovskite-like" is sufficiently definite under § 112, second paragraph. Therefore, this rejection should be withdrawn.

Rejections Under 35 U.S.C. § 103(a)

Claims 28-39 have been rejected under 35 U.S.C. § 103(a) as unpatentable over each of the following references: Kosova et al., Inorganic Materials, Vol. 34, No. 4, 1998, pp. 385-390 ("Kosova"); Baek et al., Materials Science Forum Vols. 235-238 (1997) pp. 115-120 ("Baek"); Wan et al., Acta Materialia (1999), 47(7), 2283-2291 ("Wan"); Xue et al., Materials Letters (1999), 39(6), 364-369 ("Xue"); Wang et al., Journal of the American Ceramic Society (1999), 82(5), 1358-1360 ("Wang 82(5)"); Wang et al., Journal of the American Ceramic Society (1999), 82(2), 477-479 ("Wang 82(2)"); and Wang et al., Advanced Materials (1999), 11(3), 210-213 ("Wang 11(3)").

The Examiner contends that each of the above references suggests the presently claimed process of mechanosynthesizing metal oxides of the perovskite structure. The Examiner further alleges that it would have been obvious for a person of ordinary skill to have selected the overlapping portions of the ranges disclosed by the references.

The rejection is respectfully traversed, and reconsideration is requested.

Kosova describes mechanochemical synthesis of crystallized perovskites. This reference fails to disclose two features of the presently claimed process: (1) the use of high energy milling and (2) the formation of nanocrystalline structures. Kosova does not teach or suggest the modification of its disclosed method to either use high energy

milling or form nanocrystals. Therefore, Kosova cannot be relied upon to reject the present claims as obvious.

All of the other cited references teach a two-step process. Specifically, Wan, Xue, Wang 82(5), Wang 82(2), and Wang 11(3) each discloses two milling steps: a preliminary, conventional milling step using multiple zirconia balls, followed by a high-density or high energy milling step using a single milling ball having a diameter of 12.7 mm. Baek discloses a preliminary milling step followed by a heating step.

In contrast, claims 28 and 32 have been amended to recite a process "consisting essentially of" the step of subjecting a mixture of starting powders to a high energy milling sufficient to induce a chemical reaction that forms perovskite or perovskite-like material having a nanocrystalline structure.

The term "consisting essentially of" indicates that the presently claimed invention includes the recited step(s) and is open to unlisted steps "that do not materially affect the basic and novel properties of the invention." *Ex Parte Hoffman*, 12 U.S.P.Q.2d 1061, 1064 (Bd. Pat. App. & Int. 1989); *PPG Indus. V. Guardian Indus.*, 156 F.3d 1351, 1354 (Fed. Cir. 1998). The claims as amended do not include a preliminary milling or heating step.

A person of ordinary skill in the art would not have been motivated to modify Kosova by adding a high energy milling step and the formation of nanocrystalline structures in view of any of the cited references. These references do not disclose a single high energy milling step. Rather, they teach two essential processing steps: a conventional preliminary milling or heating step and a high energy milling step. There is no teaching or suggestion in Wan, Xue, Wang 82(5), Wang 82(2), Wang 11(3), or Baek that would have motivated a person of ordinary skill to eliminate the essential

preliminary milling or heating step. Accordingly, these references cannot be relied upon, alone or in combination, to reject the present claims as obvious. Therefore, this rejection should be withdrawn.

Non-Statutory Double Patenting

Claims 28-39 have been rejected under the judicially created doctrine of non-statutory double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,017,504 ("the '504 patent"). According to the Examiner, the conflicting claims are not identical, but are also not patentably distinct.

In response, a Terminal Disclaimer is filed herewith, disclaiming the term of any patent which issues from the present appilcation and exceeds beyond the full statutory term of the '504 patent. Therefore, the Examiner is requested to withdraw the double patenting rejection over the '504 patent.

Conclusion

In view of the above amendments and remarks, it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining, which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Respectfully submitted,

Dated: July 22, 2003

By: _____
John C. Todaro
Reg. No. 36,036
Attorney for Applicants

Darby & Darby P.C.
Post Office Box 5257
New York, NY 10150-5257
212-527-7700

M:\6670\1E517\00028521.DOC